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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Patrick W. Kelley  
Appl. No. 10/691,416  
Filed: 10/22/2003  
For: Plastic Logs

Art Unit : 1775  
Examiner : Stephen J. Stein  
Atty. Docket: PWK-02-1-D

## Response to New Grounds of Rejection

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

This response to the Office Action mailed October 26, 2005 with a 3 month period for reply (expiring January 26, 2006) is submitted with a petition for a 1 month extension of time to February 26, 2006. The extension of time fee of \$60 is paid with the accompanying Credit Card Payment Form.

Applicant traverses the outstanding rejection of claims 1 and 4-13 under 35 U.S.C.103 (a) as being unpatentable over US 5,253,458 (Christian) in view of US 4,913,473 (Bonnema). Reconsideration and withdrawal of the rejection is requested in view of the following remarks

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Certificate of Facsimile Transmission (8 pages) – I certify that this response to new grounds of rejection (6 pages), a petition for extension of time (1 page) and Credit Card Payment Form (1 page) is being facsimile transmitted on February 26, 2006 to the USPTO fax number ~~703-872-9306 (which was identified in the Office communication)~~  
571-273-8300

  
Thomas E. Kelley

### Summary of Invention

Plastics are commonly substituted for wood in a wide range of real world products, e.g. privacy fencing, deck materials, pipe, siding, molding, countertops, paneling, flooring, gun stocks, chairs and tables. Each application is achieved by selecting an appropriate plastic material in structural dimensions that provide a balance of properties that allows for durable substitution for real world applications as compared to simulated products. Simulated products merely have the appearance of the product but without the functional properties. People of ordinary skill are not motivated to build plastic airplanes or real log houses or post and rail fencing from plastic based on simulated and toy products made from plastic. However, people of extraordinary skill do achieve a wood-to-plastic substitution in real world products by overcoming the inherent challenges and problems in selecting materials of construction with appropriate mechanical properties in structural dimension that provide the functional performance. The subject matter of this invention is plastic logs that are characterized by a novel combination of materials of construction, dimensions, and structural properties that make the plastic logs uniquely suitable for durable post and rail fencing applications, e.g. for corralling horses, an application previously demanding tougher materials of construction like natural wood. The ubiquitous white, plastic picket fencing lacking the durability for post and rail applications does not suggest or motivate a person of ordinary skill in the art to change materials and design to develop post and rail fencing; Nor do references to logs and pipe cited in the rejection.

### The Rejection

The primary reference in rejecting the pending claims is US 5,253,458 (Christian) which is directed to a log and panel pre-fabricated house structure using various round or square tubular-shaped logs. The logs have a substantially uniform surface dimension (diameter) over their length except at apertures for receiving bolts and comprise sections of polyvinyl chloride (PVC) tubing filled with a hard cast foam and optionally reinforced with a steel beam.

Christian fails to teach or suggest a plastic log with the characteristics required by claim 1, i.e. logs are characterized by the novel combination of

- (a) having an average diameter greater than 2 inches,
- (b) having a flexural modulus at 40 °F of at least 70,000 psi ,
- (c) having a diameter deviation in the range of 2 to 60% , and
- (d) comprising at least 80% thermoplastic materials comprising at least one polyolefin selected from the group consisting of polyethylene and polypropylene.

Christian also fails to teach or suggest a plastic log with the characteristics required by claim 4, i.e. logs that are further characterized as comprising at least one other polymeric material having a melt temperature at least 20 °C. higher than the melt temperature of the polyolefin.

Moreover, Christian fails to teach or suggest a plastic log with the characteristics required by claim 5, i.e. logs that are alternatively characterized as

- (a) having deviations in diameter simulating a natural wood log
- (b) comprising at least 80% polypropylene and
- (c) having an average diameter greater than 2 inches,
- (d) having a flexural modulus at 40 °F of at least 90,000 psi and
- (e) having a diameter deviation defined by the algorithm  $((D-d)/D) \times 100$  in the range of 2 to 60% , where D is the maximum diameter and d is the minimum diameter.

Christian also fails to teach or suggest a plastic log of claim 1 with the further characteristics required by any of claims 6-13. For instance claims 6 and 10 characterized logs having a length in the range of 5 to 7 feet; claims 8 and 12 characterize logs having a length in the range of 8 to 10 feet; and claims 7, 9, 11 and 13 characterize logs having an average diameter of not less than 3.5 inches.

The secondary reference, Bonnema et al., teaches a large diameter (typically greater than 8 inches) double-walled, molded plastic pipe which may be constructed of a variety of plastic materials, e.g. high density polyethylene, PVC or polypropylene. A double walled pipe has a smooth inner wall and a corrugated outer wall. The design facilitates coupling with a special collar. Bonnema says nothing about plastic logs, let

alone how to supplement the above-stated deficiencies of Christian in failing to teach the plastic logs of applicant's invention.

In particular, Bonnema provides no motivation to a person of ordinary skill in the art to replace the PVC and hard cast foam or optional steel materials of construction prescribed by Christian with a polyolefin thermoplastic material, e.g. polyethylene and/or polypropylene. Although Bonnema expresses a preference for high density polyethylene, Bonnema's teaching of the interchangeability of several plastic materials, including PVC, would not motivate a person of ordinary skill in the art to a substitute a polyolefin for the PVC and hard foam used by Christian.

Moreover, Bonnema's overall design objective is "rigid, inflexible but elastic" by which Bonnema means that

"the wall of the pipe is sufficiently rigid and inflexible so that, as a minimum, it would be impossible to manually telescope two pieces of such corrugated pipe, if one of them has fixed latch members intended to effect a latched connection therebetween. It also connotes that the walls of the plastic pipe are of sufficient thickness and rigidity to meet industry standard requirements for 8" or larger diameter pipe" [Bonnema at column 7, lines 54-64].

There are few common design features between double-walled pipe and plastic logs designed as post and rail fencing. The industry standard requirements for large diameter pipe do not suggest design parameters for plastic logs.

Moreover, the Bonnema pipe has a corrugated outer surface which, although it may be a type of deviation in diameter, is not a deviation in diameter that simulates the appearance of a natural wood log.

Applicant submits that neither reference, either alone or in combination, teaches or suggests the plastic logs characterized by either of independent claims 1 or 5. More particularly, Appellant submits that a *prima facie* case of obviousness has not been made for the following reasons:

- 1) Christian does not teach or suggest plastic logs with a diameter deviation limitations of either claim 1 or claim 5;
- 2) Christian does not teach or suggest plastic logs comprising the materials of construction limitations of either claim 1 or claim 5;
- 3) there is no motivation or suggestion to combine the cited references;

- 4) Bonnema is not only in a non-analogous field of art but it does not suggest to or motivate a person of ordinary skill in the art to modify the Christian logs in any way; and
- 5) Neither Christian nor Bonnema seek to solve the same problem as Applicant. There is no motivation to a person of ordinary skill in the art of building materials such as plastic logs to look for suggestions in the art of double-walled plastic pipe.

In *In re Oetiker*, 24 USPQ 2d 1443 (Fed Cir., 1992) the court of Appeals for the Federal Circuit, a judicial body charged with overseeing the patent issuing mission of the U.S.P.T.O., reversed an obviousness rejection holding that references were improperly combined, stating in relevant part:

The combination of elements from nonanalogous sources, in a manner that reconstructs the applicants' invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicants' invention itself.

The fact that the references use plastic materials for making different products does not mean that a person of ordinary skill would, *sua sponte*, make the combination absent some direction in the art to do so. Appellant submits that only in hindsight would it be proposed to make the whole sale modifications to the Christian logs by reference to a Bonnema.

This obviousness rejection is clearly an impermissible hindsight combination of references from dissimilar fields of art. The Examiner's attention is also directed to *In re Clay*, 23 USPQ 2d 1058 (Fed. Cir. 1992) in which the CAFC, in reversing a rejection based on non-analogous art, gave the USPTO guidelines for combining references based on similarity of the art. Attention is specifically directed to the CAFC's instruction stating that:

"Two criteria determine whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved."